



CHEMISTRY

BOOKS - SWAN PUBLICATION

METALS AND NON METALS

Intext Questions Solved

1. what is the function of Haemoglobin?



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2. Give an example of a metal which can be easily cut with a knife.



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3. Give an example of a metal which is the best conductor of heat.



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4. Give an example of a metal which: is a poor conductor of heat



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5. Explain the meaning of malleable and ductile



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Textbook Questions

1. Why is sodium kept immersed in kerosene oil?



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2. Write equation for the reactions of :
iron with steam



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3. Write equations for the reactions of calcium and potassium with water.



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4. Samples of four metals A,B,C and D were taken and added to the following solution one by one. The results obtained have been tabulated as follows.

| Metal | Iron (II) sulphate | Copper (II) sulphate | Zinc sulphate | Silver nitrate |
|-------|--------------------|----------------------|---------------|----------------|
| A | No reaction | Displacement | | |
| B | Displacement | No reaction | | |
| C | No reaction | No reaction | No reaction | Displacement |
| D | No reaction | No reaction | No reaction | No reaction |

Use the table above to answer the question about metals A, B, C and D: Which is the most reactive metal ?



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5. Samples of four metals A, B, C and D were taken and added to the following solution one by one. The results obtained have been

tabulated as follows.

| Metal | Iron (II) sulphate | Copper (II) sulphate | Zinc sulphate | Silver nitrate |
|--------------|---------------------------|-----------------------------|----------------------|-----------------------|
| A | No reaction | Displacement | | |
| B | Displacement | No reaction | | |
| C | No reaction | No reaction | No reaction | Displacement |
| D | No reaction | No reaction | No reaction | No reaction |

Use the table above to answer the question about metals A, B, C

and D: What would you observe if B is added to a solution of Copper (II) sulphate ?



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6. Samples of four metals A,B,C and D were taken and added to the following solution one by one. The results obtained have been tabulated as follows.

| Metal | Iron (II) sulphate | Copper (II) sulphate | Zinc sulphate | Silver nitrate |
|-------|--------------------|----------------------|---------------|----------------|
| A | No reaction | Displacement | | |
| B | Displacement | No reaction | | |
| C | No reaction | No reaction | No reaction | Displacement |
| D | No reaction | No reaction | No reaction | No reaction |

Use the table above to answer the question about metals A, B, C

and D: Arrange the metals A, B, C and D. in the order of decreasing reactivity.



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7. Which gas is produced when dilute hydrochloric acid is added to a reactive metal? Write the chemical reaction when iron reacts with dilute H_2SO_4 .



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8. What would you observe when zinc is added to a solution of iron sulphate? Write the chemical reaction that takes place.



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9. write electron dot structure of sodium and magnesium?



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10. Show the formation of Na_2O and MgO by the transfer of electrons.



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11. NaCl , MgO What are the ions present in these compounds ?



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12. Why do ionic compounds have high melting points?



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13. Define the terms: mineral



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14. Define the terms: ore



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15. Define the term.

Gangue



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16. Name two metals which occur in free state in nature?



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17. What chemical process is used for obtaining a metal from its oxide?



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18. Metallic oxides of zinc, magnesium and copper were heated with the following :

| Metal | Zinc | Magnesium | Copper |
|-----------------|------|-----------|--------|
| Zinc oxide | | | |
| Magnesium oxide | | | |
| Copper oxide | | | |

in which

cases will you find displacement reactions taking place?



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19. Which metals do not corrode easily?



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20. what are alloys?



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Textbook Exercises

1. Which of the following pairs will give displacement reactions:

A. NaCl solution and copper metal

B. $MgCl_2$ solution and aluminium metal

C. $FeSO_4$ solution and silver metal

D. $AgNO_3$ solution and metal.

Answer: D



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2. Which of the following methods is suitable for preventing an iron frying pan from rusting:

A. Applying grease

B. Applying paint

C. Applying a coating of zinc

D. All of the above.

Answer: C



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3. An element reacts with oxygen to give a compound with a high melting point. This compound is also soluble in water. The element is likely to be:

A. calcium

B. carbon

C. silicon

D. iron

Answer: A



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4. Food cans are coated with tin and not with zinc because:

- A. zinc is costlier than tin.
- B. zinc has a higher melting point than tin.
- C. zinc is more reactive than tin.
- D. zinc is less reactive than tin.

Answer: C



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5. You are given a hammer, a battery, a bulb, wires and a switch. How could you use them

distinguish between samples of metals and non-metals?



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6. You are given a hammer, a battery, a bulb, wires and a switch. How could you use them to distinguish between samples of metals and non-metals?



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7. What are amphoteric oxides? give two examples of amphoteric oxides?



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8. Name two metals which will displace hydrogen from dilute acids, and two metals which will not



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9. In the electrolytic refining a metal M what would you take as the anode, cathode and electrolyte?

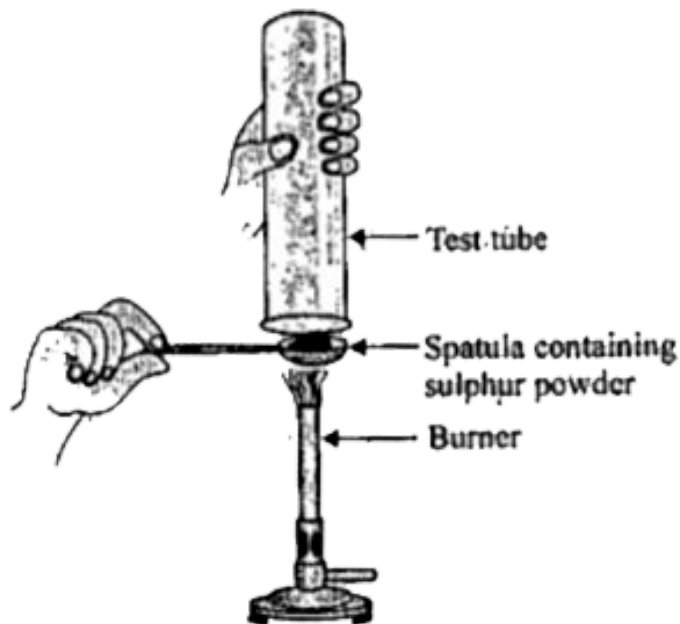


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10. Pratyush took sulphur powder on a spatula and heated it. He collected the gas evolved by inverting a test tube over it, as shown in figure below.

What will be the action of gas on

dry litmus paper, ?



: Collection of gas

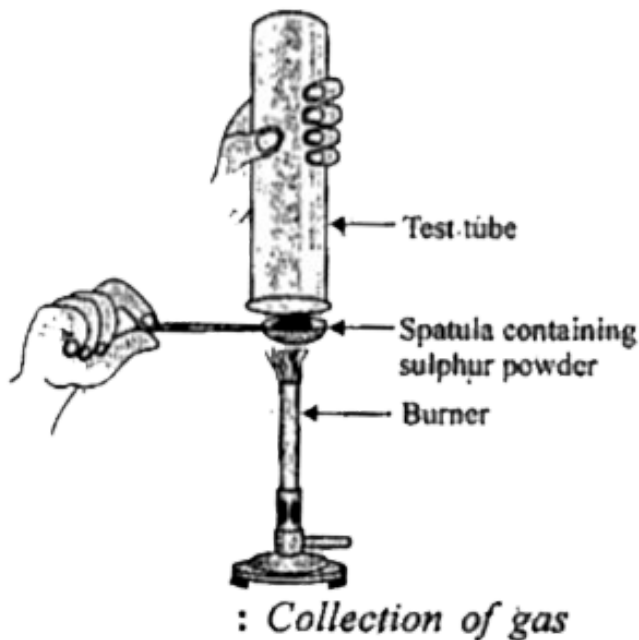


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11. Pratyush took sulphur powder on a spatula and heated it. He collected the gas evolved by

inverting a test tube over it, as shown in figure below.

What will be the action of gas on moist litmus paper ?



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12. Pratyush took sulphur powder on a spatula and heated it. he collected the gas evolved by inverting a test tube over it as shown in figure.

what is action of gas on moist litmus paper.

write a balanced chemical equation for the reaction taking place



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13. State two ways to prevent the rusting of iron



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14. What type of oxides are formed when non-metals combine with oxygen?



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15. Give reasons: Platinum, gold and silver are used to make jewellery



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16. Give reasons: sodium, potassium and lithium are stored under oil.



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17. Give reasons: aluminium is highly reactive metal, yet it is used to make utensils for cooking.



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18. Give reasons: Carbonate and sulphide ores are usually converted into oxides during the process of extraction



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19. You must have seen tarnished copper vessels being cleaned with lemon or tamarind juice. explain why these sour substances are effective in cleaning the vessels.



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20. Differentiate between metals and non-metals on the basis of their chemical properties



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21. A man went door to door posing as a goldsmith he promised to bring back the glitter of old and dull gold ornaments an unsuspecting lady gave a set of gold bangles to him which he dipped in a particular

solution the bangles sparkled like new but their weight was reduced drastically the lady was upset but after a futile argument the man beat a hasty retreat can you play the detective to find out the nature of the solution he had used?



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22. Give the reason why copper is used to make hot water tanks but steel (an alloy of iron) is not.



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Additional Important Questions Multiple Choice Questions

1. In metals conduction of current is due to



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2. Ores of most of metal are available as:

A. carbonates

B. sulphide

C. oxides

D. nitride

Answer: C



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3. Which of following is not a metal ?

A. sodium

B. iron

C. carbon

D. zinc.

Answer: C



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4. Bronze is an alloy of



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5. Which of the following has the highest specific heat?

A. Copper

B. Aluminium

C. Silver

D. Iron

Answer: C



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6. The most abundant element in the earth's crust is:

A. Copper

B. Zinc

C. Aluminium

D. Iron

Answer: C



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7. In which form, non-metals exist?

A. Solid

B. Liquid

C. Gaseous

D. all the above

Answer: D



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8. When fuels burn, what do they produce?



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9. Which, metal do not react with water at all?



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10. In which ratio conc. hydrochloric acid and conc: nitric acid to form aqua regia ?

A. 1:3

B. 3:1

C. 1:2

D. 2:1

Answer: B



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11. In which acids, gold can be dissolved?



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12. The sulphid ores are converted into oxides by heating strongly on the presence of excess air. This process is called.....

- A. Roasting
- B. Calcination
- C. Refining
- D. None

Answer: A



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13. The carbonates are changed into oxides by heating strongly in limited air. This process is known as



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14. Pure gold is known as



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Additional Important Questions Very Short Answer Type Questions

1. Name a metal which is best conductor of heat.



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2. Fill in the blanks- _____ an _____ metals that can be easily cut with a knife.



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3. Give two examples of oxide ore.



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4. Why excretion is important?



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5. When we come in contact with dust, we often sneeze. Why?



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6. Fill in the blanks- In cockroaches, the air enters through _____.



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7. State whether the statement is true or false- the air enters through lungs in cockroaches.



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8. State whether the statement is true or false-

White blood cells helps to clot the blood.



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9. State whether the statement is true or false-

We often get cramps in our legs due to heavy exercises. This is due to the accumulation of water in the muscles.



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10. State whether the statement is true or false- While running, the motion of our hands is linear motion.



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11. State whether the statement is true or false- Motion of a horse pulling a cart on a straight road is called oscillatory motion.



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12. Fill in the blanks- Motion of a child in a merry-go-round is _____ motion.



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13. Fill in the blanks- Motion of the hammer of an electric bell is _____ motion.



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14. Fill in the blanks- motion of a train on straight bridge is _____ motion.



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15. Fill in the blanks- _____, _____, _____ are the three physical forms of water.



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16. Explain in brief- Dwelling of animals help the forest to flourish. How?



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Additional Important Questions Short Answer Type Questions

1. What do you mean by the activity series of metals?



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2. Name various steps involved in the extraction of a metal from its ore?



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3. What is alkali? Give examples.



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4. Show by means of equations that zinc is more reactive than copper.



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5. What is corrosion? What are the different ways to reduce corrosion?



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6. Give reaction of Aluminium oxide with acid and base.



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7. Which of the following gas is released when a metal react with acids?



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8. Give the formulae of compound formed from the following sets of elements : calcium and nitrogen



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9. What is a thermite reaction?



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10. Fill in the blanks- The organisms which feed on dead plants and animals are called _____.



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11. Draw electron dot structure of magnesium and potassium.



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12. Show formation of K_2O and MgO by transfer of electrons.



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13. Name the ions present in compounds Na_2O and MgO and symbolise them.



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14. Explain in brief- Forests maintain the oxygen-carbon dioxide balance.



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15. Write down the names of compounds represented by the following formulae. Also show the ions present in them. NaCl



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16. Write down the names of compounds represented by the following formulae. Also show the ions present in them. CaCO_3



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17. Write down the names of compounds represented by the following formulae. Also show the ions present in them. KCl



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18. Write down the names of compounds represented by the following formulae. Also show the ions present in them. NH_4Cl



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19. Mention any four products forests provide us?



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20. Write down the names of compounds represented by the following formulae. Also show the ions present in them. MgO



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21. The main components of photosynthesis are-



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Additional Important Questions Long Answer Type Questions

1. Write down the names of compounds represented by the following formulae. Also show the ions present in them. CaO



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2. Fill in the blanks- _____ and _____ are the products of photosynthesis.



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3. Write down the names of compounds represented by the following formulae. Also show the ions present in them. Al_2O_3



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4. Write down the names of compounds represented by the following formulae. Also show the ions present in them. NaOH



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5. Explain general properties of ionic compounds



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6. Fill in the blanks- _____ and _____ can be grown in sandy soil.



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7. What do you mean by corrosion? How can it be controlled ?



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8. Write down the names of compounds represented by the following formulae. Also show the ions present in them. CuSO_4



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9. Write down the names of compounds represented by the following formulae. Also show the ions present in them. $\text{Ca}(\text{NO}_3)_2$



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